cent the contact area, thereby permitting indium atoms from the ribbon 12 to form an indium-germanium alloy which upon cooling recrystallizes to produce a strongly acceptor impurity doped P-type region 37 in N-type crystal 26, resulting in a P-N junction.

In Fig. 8 on the other hand, no convexity has been imparted to ribbon 12*a*, which has a shape prior to connection to electrode 11 as shown in Fig. 6. As can be seen in Fig. 8, contact surface areas between crystal 26 and contact element 12*a*, as well as that between ribbon portions 30 and 31 and surface 36 of envelope 25 are considerably less than that achieved in the Fig. 7 envelope.

In Figs. 9, 10, and 11, alternative shapes have been shown which contact or ribbon 12 may assume, the shapes ranging from a cylindrical wire shown in Fig. 9 to a segment thereof in Fig. 10 to an elliptical cylinder as shown in Fig. 11.

Figs. 12, 13, and 14 respectively show how ribbon 12*a* may be shaped to produce an irregular edge or edges thereupon, in order to be able to pierce the oxide layer which naturally forms on the surface of a crystal.

In Fig. 12 serrations 38 have been provided toward this end, while perforations 39 in Fig. 13 are produced for the same purpose.

Fig. 14 utilizes a dimpled point 40, thus applying the inherent advantages of the resilient loop contact of the present invention to a point contact device. The ribbons 12*a* of Figs. 12 through 14 have been shown flat as in Fig. 6, but it should be borne in mind that the shape of the ribbon of Fig. 5, i. e., convex shape, is equally applicable.

There has thus been described a new and novel crystal-to-electrode contact for a semiconductor device which lends itself to ease of manufacture and which inherently permits relatively large heat dissipation.

What is claimed as new is:

1. A semiconductor electrical translating device including the combination of: a body of semiconductive material of one conductivity type having in a first face thereof a region of the opposite conductivity type; a resilient loop contact element having a portion in engagement with said first face of said body at said region; a first electrical conductor connected to another portion of said loop contact element; and a second electrical conductor engaging a second face of said body.

2. A semiconductor electrical translating device including: a body of semiconductive material of one conductivity type having in a first face thereof a region of the opposite conductivity type; a resilient loop contact element having a portion engaging said first face of said body at said region, said loop contact element consisting of a thin, convex-shaped resilient metallic ribbon, the convexity of said ribbon being with respect to the axis of its perimeter; a first electrical conductor connected to another portion of said loop contact element; and a second electrical conductor in ohmic contact with a second face of said body.

3. A semiconductor electrical translating device including the combination of: a body of semiconductive material of one conductivity type; a resilient loop contact element doped with an active impurity of the opposite conductivity type from that contained in said body, and having a first portion welded to one face of said body; a first electrical conductor connected to another portion of said loop contact element disposed opposite said first portion; and a second electrical conductor engaging a second face of said body.

4. A semiconductor electrical translating device including the combination of: a semiconductive crystal of one conductivity type having a doped region of the opposite conductivity type disposed in a first face of said crystal; a loop contact element doped with an impurity of the same conductivity type as that contained in said region, and having a closed end portion welded to said first face of said crystal at said doped region; a first electrical conductor connected to another portion of said loop contact element disposed opposite said closed portion; a second electrical conductor engaging a second face of said body; a hollow vitreous substantially cylindrical envelope wholly encasing said crystal and said loop contact element and having fused hermetic seals with said first and second conductors for maintaining said conductors in their relative positions, said loop contact element consisting of a thin, convex-shaped resilient metallic ribbon, the convexity of said ribbon being with respect to the axis of its perimeter, a section of the convex surface of said ribbon intermediate said portions being in intimate contact with the inner walls of said vitreous envelope, the radius of curvature of said inner walls being substantially coincident with the radius of curvature of said ribbon at said section.

5. A semiconductor electrical translating device including the combination of: a body of semiconductive material; a resilient loop contact element engaging a portion of said body, said element having serrations therein at said portion; and an electrical conductor engaging a second portion of said body.

6. A semiconductor electrical translating device including the combination of: a body of semiconductive material; a resilient loop contact element engaging a portion of said body, said element having perforations therein at said portion; and an electrical conductor engaging a second face of said body.

7. A semiconductor electrical translating device including the combination of: a body of semiconductive material; a resilient loop contact element engaging a portion of said body, said element having a dimpled point therein at said portion; and an electrical conductor engaging a second face of said bodies.

8. A semiconductor electrical translating device including the combination of: a body of semiconductive material; a resilient loop contact element of electrically conductive material engaging a first face of said body; a first electrical conductor having a slot provided in the end thereof for receiving ends of said resilient loop contact element; and a second electrical conductor engaging a second face of said body.

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